

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Identification and Physical Characteristics

Identification

User Identification: 100,000 Barrels of Crude Oil
City:
State: Texas
Company:
Type of Tank: Internal Floating Roof Tank
Description:

Tank Dimensions

Diameter (ft): 150.00
Volume (gallons): 2,400,000.00
Turnovers: 24.00
Self Supp. Roof? (y/n): N
No. of Columns: 9.00
Eff. Col. Diam. (ft): 1.00

Paint Characteristics

Internal Shell Condition: Light Rust
Shell Color/Shade: White/White
Shell Condition: Good
Roof Color/Shade: White/White
Roof Condition: Good

Rim-Seal System

Primary Seal: Mechanical Shoe
Secondary Seal: Rim-mounted

Deck Characteristics

Deck Fitting Category: Detail
Deck Type: Welded

Deck Fitting/Status**Quantity**

Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1
Roof Leg or Hanger Well/Adjustable	32
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	1
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1

Meteorological Data used in Emissions Calculations: Corpus Christi, Texas (Avg Atmospheric Pressure = 14.7 psia)

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Liquid Contents of Storage Tank

100,000 Barrels of Crude Oil - Internal Floating Roof Tank

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F)			Liquid Bulk Temp (deg F)	Vapor Pressure (psia)			Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
		Avg.	Min.	Max.		Avg.	Min.	Max.					
Crude oil (RVP 5)	All	73.50	68.36	78.64	71.57	3.7265	N/A	N/A	50.0000			207.00	Option 4: RVP=5

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100,000 Barrels of Crude Oil - Internal Floating Roof Tank

Annual Emission Calculations

Rim Seal Losses (lb):	131.3005
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph) ⁿ):	0.4000
Value of Vapor Pressure Function:	0.0729
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	3.7265
Tank Diameter (ft):	150.0000
Vapor Molecular Weight (lb/lb-mole):	50.0000
Product Factor:	0.4000
Withdrawal Losses (lb):	389.3221
Number of Columns:	9.0000
Effective Column Diameter (ft):	1.0000
Annual Net Throughput (gal/yr.):	57,600,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0060
Average Organic Liquid Density (lb/gal):	7.1000
Tank Diameter (ft):	150.0000
Deck Fitting Losses (lb):	564.4463
Value of Vapor Pressure Function:	0.0729
Vapor Molecular Weight (lb/lb-mole):	50.0000
Product Factor:	0.4000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	386.9000
Deck Seam Losses (lb):	0.0000
Deck Seam Length (ft):	0.0000
Deck Seam Loss per Unit Length Factor (lb-mole/ft-yr):	0.0000
Deck Seam Length Factor(ft/sqft):	0.0000
Tank Diameter (ft):	150.0000
Vapor Molecular Weight (lb/lb-mole):	50.0000
Product Factor:	0.4000
Total Losses (lb):	1,085.0689

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors		m	Losses(lb)
		KFa(lb-mole/yr)	KFb(lb-mole/(yr mph ⁿ))		
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	1	1.60	0.00	0.00	2.3342
Column Well (24-in. Diam.)/Built-Up Col.-Sliding Cover, Gask.	1	33.00	0.00	0.00	48.1435
Ladder Well (36-in. Diam.)/Sliding Cover, Gasketed	1	56.00	0.00	0.00	81.6981
Roof Leg or Hanger Well/Adjustable	32	7.90	0.00	0.00	368.8085
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	1	6.20	1.20	0.94	9.0451
Automatic Gauge Float Well/Unbolted Cover, Gasketed	1	4.30	17.00	0.38	6.2732
Slotted Guide-Pole/Sample Well/Gask. Sliding Cover, w. Float, Wiper	1	21.00	7.90	1.80	30.6368
Sample Pipe or Well (24-in. Diam.)/Slit Fabric Seal 10% Open	1	12.00	0.00	0.00	17.5067

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Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

100,000 Barrels of Crude Oil - Internal Floating Roof Tank

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Crude oil (RVP 5)	131.30	389.32	564.45	0.00	1,085.07

